

GenCore version 4.5  
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OM nucleic - nucleic search, using sw model

Run on: February 3, 2000, 14:19:01 ; Search time 33043.4 Seconds  
(without alignments)  
141.116 Million cell updates/sec

Title: US-08-962-560a-3  
Perfect score: 1235  
Sequence: 1 CGAGGCTCAAGCTCCGGCGC.....ACAAAAAAAAAAAAAAAA 1235

Scoring table: IDENTITY\_NUC  
Gapop 10.0 , Gapext 1.0

Searched: 4538634 seqs, 1887831982 residues

Total number of hits satisfying chosen parameters: 9077268

Minimum DB seq length: 0  
Maximum DB seq length: 1000000

Post-processing: Minimum Match 0%  
Listing first 45 summaries

Database : EST:  
1: em\_est1:\*  
2: em\_est2:\*  
3: em\_est3:\*  
4: em\_est4:\*  
5: em\_est5:\*  
6: em\_est6:\*  
7: em\_est7:\*  
8: em\_est8:\*  
9: em\_est9:\*  
10: em\_est10:\*  
11: em\_est11:\*  
12: em\_est12:\*  
13: em\_est13:\*  
14: em\_est14:\*  
15: em\_est15:\*  
16: em\_est16:\*  
17: em\_est17:\*  
18: em\_est18:\*  
19: em\_est19:\*  
20: em\_est20:\*  
21: em\_est21:\*  
22: em\_est22:\*  
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27: em\_est27:\*  
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100: gb\_est81:\*  
101: gb\_est82:\*  
102: gb\_est83:\*  
103: gb\_est84:\*  
104: gb\_est85:\*  
105: gb\_est86:\*

Pred. No. is the number of results predicted by chance to have a  
score greater than or equal to the score of the result being printed,  
and is derived by analysis of the total score distribution.

## SUMMARIES

Result NO.	Score	Match	Length	DB	ID	Description
1	574.8	46.5	602	39	AA881502	AA881502 vx19f05.r
2	511.2	41.4	623	39	AA849015	AA849015 EST191777



Db 482 TCGCAGGAGAGCTCTTCTCGGCTCAGGCTGAGATGCTTGGGCGCAGACAT 541  
 QY 541 CCGCGTACATTCAGGCGCGCGCTTCACCTTGAGAGCGCAGACATTCGACTG 600  
 Db 542 CCGCGTACATTCAGGCGCGCGCTTCACCTTGAGAGCGCAGACATTCGACTG 601  
 QY 601 C 601  
 Db 602 C 602

RESULT 2  
 AA849015 623 bp mRNA EST 30-APR-1998  
 LOCUS AA849015.3  
 DEFINITION EST191777 Normalized rat lung, Bonto Soares Rattus sp. cDNA clone  
 accession R10A34.3' end, mRNA sequence.  
 ACCESSION AA849015  
 VERSION AA849015.1 GI:2936555  
 KEYWORDS EST.  
 SOURCE Rattus sp.  
 ORGANISM Rattus sp.  
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;  
 Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.  
 1 (bases 1 to 623)  
 Lee, N.H., Glodok, A., Chandra, I., Mason, T.M., Quackenbush, J.,  
 Kerlavage, A.R. and Adams, M.D.  
 Rat Genome Project: Generation of a Rat EST (RESE) Catalog & Rat  
 Gene Index  
 Unpublished (1998)  
 On Jan 9, 1998 this sequence version replaced gi:936155.  
 CONTACT: Lee, NH  
 ATCC  
 The Institute for Genomic Research  
 9712, Medical Center Drive, Rockville, MD 20850, USA  
 Tel: (301)-838-3529  
 Fax: (301)-838-0208  
 Email: nhlee@tigr.org  
 Seq primer: M13-21.

FEATURES  
 source  
 1..623  
 /organism="Rattus sp."  
 /db\_xref="ATCC (inhost):2008043"  
 /db\_xref="taxon:10118"  
 /clone="R10A34"  
 /clone\_1ib="Normalized rat lung, Bonto Soares"  
 /note="Organ: Lung; Vector: pT73Pac; Site\_1: EcoRI;  
 Site\_2: NotI"

BASE COUNT 94 a 193 c 254 g 82 t

Query Match 41.4%; Score 511.2; DB 39; Length 623;  
 Best Local Similarity 91.1%; Prid. No. 2.9e-85;  
 Matches 543; Conservative 0; Mismatches 53; Indels 0; Gaps 0;

QY 56 TGGCGGCGCTGTCGACACCGGAGCGCGGCTGCTGCTGCTGCCCATAGGCGAG 115  
 Db 596 TGGCGGCGACACCGCGGAGACCGCGCGCGCGCGCGCTGCCGCGCAGCGCGAG 537  
 QY 116 CCGCGAGCATATGCGCCACCTCCAGCTGCGCCCTCGAGTAGATGATGACGAC 175  
 Db 536 CCGCGAGCATATGCGCCACCTCCAGCTGCGCCCTCGAGTAGATGATGACGAC 477  
 QY 176 CAGGTGGACCGCAATGCGATCTCCCGGAGAGAGCGCGCGGCTGACAGCCC 235  
 Db 476 CAGGTGGACCGCAATGCGATCTCCCGGAGAGAGCGCGCGGCTGACAGCCA 417  
 QY 236 TCGTGCCTCGCTGCTGCTGCTGCGGAGCGCGCGCGCGCGCGCGCGCGCGG 295  
 Db 416 TCGTGCCTCGCTGCTGCTGCTGCGGAGCGCGCGCGCGCGCGCGCGCGG 357  
 QY 296 GTCCAGCGG 355

Db 356 GTCCGG 297  
 QY 356 CCGCGCATCACGCGGAGACACCGCGCGCTCTTCCAGAGCGCTTCTATTTGGACCCCTG 415  
 Db 296 CCGCGCATCACGCGGAGACACCGCGCGCTCTTCCAGAGCGCGCTTCTATTTGGACCCCTG 237  
 QY 416 AGCGTGCAGCGGCGCGAGCGCGCGCGCGCGCGCGCGCGCGCGCGCGCGCGG 475  
 Db 236 AGCGTGCATGCGGCGCGAGACCGCGCTGCTGCGGAGCGCGCGCGCGCGCGG 177  
 QY 476 GACAGTGTCAACGAGACCTCTTTCGCGCTCAGCGTGAAGATGCTTGGGCGCCAGC 535  
 Db 176 GACAGTGTCAACGAGACCTCTTTCGCGCTCAGCGTGAAGATGCTTGGGCGCCAGC 117  
 QY 536 AGCATCCGCGCTGACCTTCCAGCGCGCGCGCTTCCACTTGAGAGCGCGCGGACCTTC 595  
 Db 116 AGCATCTGTGCACTTCCAGCGCGCGCGCTTCCACTTGAGAGCGCGCGGACCTTC 57  
 QY 596 GACTGCCTTTCGAGGCTGCTGAGCACTACGTGGCGCGCGCGCGCGCGCATGTTGGG 651  
 Db 56 GACTGCCTTTCGAGGCTGCTGAGCACTACGTGGCGCGCGCGCGCGCGCATGTTGGG 1

RESULT 3  
 A1019717 538 bp mRNA EST 16-JUN-1998  
 LOCUS A1019717.1  
 DEFINITION ua94b12.r1 Soares mouse mammary gland NBMWG Mus musculus cDNA clone  
 IMAGE:1365119 5' similar to TR:O35716 O35716 SUPPRESSOR OF CYTOKINE  
 SIGNALING-1. [1] ; mRNA sequence.  
 ACCESSION A1019717  
 VERSION A1019717.1 GI:3234053  
 KEYWORDS EST.  
 SOURCE house mouse.  
 ORGANISM Mus musculus  
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;  
 Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
 1 (bases 1 to 538)  
 Marra, M., Hillier, L., Allen, M., Bowles, M., Dietrich, N., Dubuque, T.,  
 Schellenberg, K., Steptoe, M., Tan, F., Underwood, K., Moore, B.,  
 Theising, B., Wylie, T., Lennon, G., Soares, B., Wilson, R. and  
 Waterston, R.  
 The WashU-HMI Mouse EST Project  
 Unpublished (1996)  
 On Jan 17, 1998 this sequence version replaced gi:2044043.  
 CONTACT: Marra M/Mouse EST Project  
 WashU-HMI Mouse EST Project  
 Washington University School of Medicine  
 4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108  
 Tel: 314 286 1800  
 Fax: 314 286 1810  
 Email: mouseest@watson.wustl.edu  
 This clone is available royalty-free through LNL; contact the  
 IMAGE Consortium (info@image.lnl.gov) for further information.  
 MGI:898339  
 Possible reversed clone: similarity on wrong strand  
 Seq primer: -28m13 rev2 ET from Amersham  
 High quality sequence stop: 512.

FEATURES  
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 1..538  
 /organism="Mus musculus"  
 /strain="C57BL/6J"  
 /db\_xref="taxon:10090"  
 /clone="IMAGE:1365119"  
 /clone\_1ib="Soares mouse mammary gland NBMWG"  
 /sex="male"  
 /tissue\_type="mammary gland"  
 /dev\_stage="4 weeks"  
 /lab\_host="DH10B"  
 /note="Organ: mammary gland; Vector: pT73D-Pac  
 (pharmacia) with a modified polylinker; Site\_1: Not I;  
 Site\_2: Eco RI; 1st strand cDNA was primed with a Not I -  
 oligo(dT) primer [5]"

TGTACCAATCTGAAGTGGAGCGGCCGCAATGTTTTTTTTTTTTTTTTTTTT  
 T 3'): double-stranded cDNA was ligated to Eco RI  
 adaptors (Pharmacia), digested with Not I and cloned into  
 the Not I and Eco RI sites of the modified p773 vector.  
 RNA provided by Dr. Minoru Ko, Wayne State Univ. Library  
 constructed and normalized by Bento Soares and M.Fatima  
 Bonaldo."

BASE COUNT 161 a 137 c 150 g 90 t  
 ORIGIN

Query Match 41.1%; Score 508.2; DB 41; Length 538;  
 Best Local Similarity 99.2%; Pred. No. 1e-84;  
 Matches 521; Conservative 0; Mismatches 3; Indels 1; Gaps 1;

QY 686 CAGAGCTGTGTGGCCAGCCATCGTGGCGCGGTGGCGAGAACCTGGCGGCATC 745  
 DB 538 CAGAGCTGTGTGGCCAGCCATCGTGGCGCGGTGGCGAGAACCTGGCGGCATC 479  
 QY 746 CCTTACACCGGTACTCCGTGACTGACTGAGTTCCTCCCTCCAGATCGACGGCT 805  
 DB 478 CCTTACACCGGTACTCCGTGACTGACTGAGTTCCTCCCTCCAGATCGACGCT 419  
 QY 806 GCCGTGTGGCCAGCATTAAGTGGGGCGCCCTATTATTCTTATTATTATTATT 865  
 DB 418 GCCGTGTGGCCAGCATTAAGTGGGGCGCCCTATTATTCTTATTATTATTATT 359  
 QY 866 ATTTTCTGAGACAGTGGGAGACCTCCCGCTGGGTGGAGAGTGGTGTGAGG 925  
 DB 358 ATTTTCTGAGACAGTGGGAGACCTCCCGCTGGGTGGAGAGTGGTGTGAGG 299  
 QY 926 GTGAGATGCTCCCATCTTCTGGCTGGAGACCTATCCACCTCTCAGGGGTGGTCT 985  
 DB 298 GTGAGATGCTCCCATCTTCTGGCTGGAGACCTATCCACCTCTCAGGGGTGGTCT 239  
 QY 986 CCCCTCTGCTGCTCCCTCCGCGGTGCCCGCTGGTGTAGCAGCTGTGTGGGGCAGG 1045  
 DB 238 CCCCTCTGCTGCTCCCTCCGCGGTGCCCGCTGGTGTAGCAGCTGTGTGGGGCAGG 180  
 QY 1046 ACCTGAATCCATCTCTACTCTCCATGTTTACATATCCCATATCTTGGCAACCA 1105  
 DB 179 ACCTGAATCCATCTCTACTCTCCATGTTTACATATCCCATATCTTGGCAACCA 120  
 QY 1106 GGGGTGGGGAGGGTCTGTGCTTCAATTTTCTGCTGCGAGATATCCATTTTAT 1165  
 DB 119 GGGGTGGGGAGGGTCTGTGCTTCAATTTTCTGCTGCGAGATATCCATTTTAT 60  
 QY 1166 TTACAGCCAGTTAGTAATAAATTATTATGAAGTTTTTT 1210  
 DB 59 TTACAGCCAGTTAGTAATAAATTATTATGAAGTTTTTT 15

RESULT 4  
 AA288982 517 bp mRNA EST 14-APR-1997  
 LOCUS vha6e05.r1 Soares mouse lymph node NBLMLN Mus musculus cDNA clone  
 DEFINITION IMAGE:752192 5', mRNA sequence.  
 ACCESSION AA288982  
 VERSION AA288982.1 GI:1936171  
 KEYWORDS EST.  
 SOURCE house mouse.  
 ORGANISM Mus musculus  
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;  
 Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
 REFERENCE 1 (bases 1 to 517)  
 Marra, M., Hillier, L., Allen, M., Bowles, M., Dietrich, N., Dubuque, T.,  
 Geisel, S., Kucabara, T., Lacy, M., Le, M., Martin, J., Morris, M.,  
 Schellenberg, R., Steptoe, M., Tan, F., Underwood, K., Moore, B.,  
 Theising, B., Wylie, T., Lennon, G., Soares, B., Wilson, R. and  
 Waterston, R.  
 TITLE The WashU-HM Mouse EST Project  
 JOURNAL Unpublished (1996)  
 COMMENT On Sep 12, 1996 this sequence version replaced gi:1404954.

Contact: Marra M/Mouse EST Project  
 WashU-HM Mouse EST Project  
 Washington University School of Medicine  
 4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108  
 Tel: 314 286 1800  
 Fax: 314 286 1810  
 Email: mouseest@wustl.wustl.edu  
 This clone is available royalty-free through LNL; contact the  
 IMAGE Consortium (info@image.lnl.gov) for further information.  
 MGI:461176  
 Seq primer: -28m13 rev2 ET from Amersham  
 High quality sequence stop: 475.  
 FEATURES  
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 /organism="Mus musculus"  
 /strain="C57BL/6J"  
 /db\_xref="taxon:10090"  
 /clone\_image="IMAGE:752192"  
 /clone\_lib="Soares mouse lymph node NBLMLN"  
 /sex="male"  
 /tissue\_type="lymph node"  
 /dev\_stage="4 weeks"  
 /lab\_host="DH10B"  
 /note="Organ: lymph node; Vector: p773D-Pac (Pharmacia)  
 with a modified polylinker; Site 1: Not I; Site 2: Eco RI;  
 1st strand cDNA was primed with a Not I - oligo(dT) primer  
 15'.  
 TGTACCAATCTGAAGTGGAGCGGCCGCAATGTTTTTTTTTTTTTTTTTTTT  
 3'): double-stranded cDNA was ligated to Eco RI adaptors  
 (Pharmacia), digested with Not I and cloned into the Not I  
 and Eco RI sites of the modified p773 vector. RNA  
 provided by Dr. Bertrand Jordan. Library constructed and  
 normalized by Bento Soares and M.Fatima Bonaldo."

BASE COUNT 156 a 130 c 142 g 89 t  
 ORIGIN

Query Match 41.0%; Score 506; DB 31; Length 517;  
 Best Local Similarity 99.8%; Pred. No. 2.7e-84;  
 Matches 517; Conservative 0; Mismatches 0; Indels 1; Gaps 1;

QY 700 CCAGGCGATCGTGGCGCGCGGTGGTGGCGAGAACCTGGCGGCATCTTAAACCGGT 759  
 DB 517 CCAGGCGATCGTGGCGCGCGGTGGTGGCGAGAACCTGGCGGCATCTTAAACCGGT 458  
 QY 760 ACTCGTACTACCTGAGTCTTCCCTCCAGATCTGACCGGGTGGCGGCGTGGCGGA 819  
 DB 457 ACTCGTACTACCTGAGTCTTCCCTCCAGATCTGACCGGGTGGCGGCGTGGCGGA 398  
 QY 820 GCATTAGTGGGGGCGCTTATTATTATTATTATTATTATTATTATTATTATTATT 879  
 DB 397 GCATTAGTGGGGGCGCTTATTATTATTATTATTATTATTATTATTATTATTATT 338  
 QY 880 ACGTGGAGCCCTCCCGCGGTGGTGGAGAGTGGTGGAGGTGAGATGCTCC 939  
 DB 337 ACGTGGAGCCCTCCCGCGGTGGTGGAGAGTGGTGGAGGTGAGATGCTCC 278  
 QY 940 ACTTCTGCTGAGACCTCATCCACCTCTCAGGGGTGGGGTGGTCCCTCCCTGGTGT 999  
 DB 277 ACTTCTGCTGAGACCTCATCCACCTCTCAGGGGTGGGGTGGTCCCTCCCTGGTGT 218  
 QY 1000 CCTCGGGTCCCGCTGGTGTAGCAGTGTGTCTGGGCGCAGACCTGAATCCACT 1059  
 DB 217 CCTCGGGTCCCGCTGGTGTAGCAGTGTGTCTGGGCGCAGACCTGAATCCACT 159  
 QY 1060 CCTACTCTCATGTTTACATATTCAGATCTTGGCAACAACAGGGGTGGGGAGGG 1119  
 DB 158 CCTACTCTCATGTTTACATATTCAGATCTTGGCAACAACAGGGGTGGGGAGGG 99  
 QY 1120 TCTTGGCTTCAATTTTCTGCTGCTGCGAGATATCTTATTATTATTATTATTATT 1179  
 DB 98 TCTTGGCTTCAATTTTCTGCTGCTGCGAGATATCTTATTATTATTATTATTATTATT 39



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/clone="IMAGE:1265184"
/sex="male" Soares 2NbWT"
/tissue_type="Thymus"
/dev_stage="4 weeks"
/lab_host="DH10B"
/notes="Vector: pT73D-Pac (Pharmacia) with a modified
polylinker. Site 1: Not I; Site 2: Eco RI; 1st strand cDNA
was primed with a Not I - oligo(dT) primer [5',
TCCTACCATCTCAGTGGAGGCGCCGCTTTTCTTTTCTTTTCTTTTCTTTT
3']; double-stranded cDNA was ligated to Eco RI adaptors
(Pharmacia), digested with Not I and cloned into the Not I
and Eco RI sites of the modified pT73 vector. RNA
provided by Dr. Bertrand Jordan. Library went through two
rounds of normalization, and was constructed by Bento
Soares and M. Fatima Bonaldo."
BASE COUNT      157 a      129 c      138 g      87 t      1 others
ORIGIN

```

```

Query Match      38.5%: Score 475.8; DB 39; Length 512;
Best Local Similarity 97.9%; Pred. No. 1e-78; Indels 3; Gaps 2;
Matches 503; Conservative 0; Mismatches 8;

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QY 701 CAGCGCATCTGCGCGCGCGGTCGCGAGAGACCTGGCGCATCCCTTAAACCGGTA 760
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DB 512 CAGCGCATCTGCGCGCGCGGTCGCGAGAGACCTGGCGCATCCCTTAAACCGGTA 453
|||||
QY 761 CTCGCTACTACTGAGTCTCTCCCTTCGAGATCGACCGGCTGCGCTGCGCGAG 820
|||||
DB 452 CTCGCTACTACTGAGTCTCTCCCTTCGAGATCGACCGGCTGCGCTGCGCGAG 393
|||||
QY 821 CATTAAGTGGGGGCGCTTATTTCTATTAATTAATTAATTTTCTGGAACA 880
|||||
DB 392 CATTAAGTGGGGGCGCTTATTTCTATTAATTAATTAATTTTCTGGAACA 333
|||||
QY 881 CGTGGAGCCCTCCCGCCCTGGGTGCGAGGAGTGTGTGGAGGAGTGCCTCCCA 940
|||||
DB 332 CGTGGAGCCCTCCCGCCCTGGGTGCGAGGAGTGTGTGGAGGAGTGCCTCCCA 273
|||||
QY 941 CTCTGCTGAGAGACCTATCCACCTCTCAGGGGTGGGGG-GTCTCTCCCTGCTGCT 999
|||||
DB 272 CTCTGCTGAGAGACCTATCCACCTCTCAGGGGTGGGGG-GTCTCTCCCTGCTGCT 213
|||||
QY 1000 CCTCCGCGGTCGCCCTGTTGTGAGACGTTGTCTGGGGCCAGACCTGAATTCAC 1059
|||||
DB 212 CC--TCGCGTCCCCCGGTTGTGAGACGTTGTCTGGGGCCAGACCTGAATTCAC 155
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QY 1060 CCTACTCTCCATGTTTACATATTCAGATATCTTTGACAAACAGGGGTGGGAGGG 1119
|||||
DB 154 CCTACTCTCCATGTTTACATATTCAGATATCTTTGACAAACAGGGGTGGGAGGG 95
|||||
QY 1120 TCTCTGCTCATTTTCTCTGCTGTCGAGAAATCTTATTTTATTTTACAGCACTTT 1179
|||||
DB 94 TCTCTGCTCATTTTCTCTGCTGTCGAGAAATCTTATTTTATTTTACAGCACTTT 35
|||||
QY 1180 AGGTAATAAATTATATGAAAGTTTCTTTTAA 1213
|||||
DB 34 AGGTAATAAATTATATGAAAGTTTCTTTTAA 1

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```

RESULT 7
LOCUS AI029171 548 bp mRNA EST 04-JUL-1999
DEFINITION UI-R-CO-1v-e-09-0-01.s1 UI-R-CO Rattus norvegicus cDNA clone
ACCESSION AI029171
VERSION AI029171.1 GI:4296711
KEYWORDS EST.
SOURCE Norway rat.
ORGANISM Rattus norvegicus
Eukaryota; Metazoa; Chordata; Cranialata; Vertebrata; Mammalia;
Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.

```

```

REFERENCE 1 (Bases 1 to 548)
AUTHORS Bonaldo,M.F., Lennon,G. and Soares,M.B.
TITLE Normalization and subtraction: two approaches to facilitate gene
JOURNAL discovery
MEDLINE Genome Res. 6 (9), 791-806 (1996)
COMMENT 97044477
On Jun 22, 1998 this sequence version replaced g1:3246997.
Contact: Soares, MB
Program for Rat Gene Discovery and Mapping
University of Iowa
451 Eckstein Medical Research Building Iowa City, IA 52242, USA
Tel: 319 335 8250
Fax: 319 335 9565
Email: mssoares@blue.weeg.uiowa.edu

```

```

Oligo-dT track not found. Not I site shown in beginning of sequence
is likely internal to the message. cDNA library preparation: M.
Fatima Bonaldo, Ph.D. Clone distribution: clones will be available
through Research Genetics This clone is also available through the
I.M.A.G.E. Consortium at LBNL (info@image.lbnl.gov). IMAGE
ID=1782655 The following repetitive elements were found in this
cDNA sequence: 163-196, >AT-rich#low_complexity
Seq primer: M13 Forward
POLYA-No.

```

```

FEATURES
Source

```

```

1. 548
/organism="Rattus norvegicus"
/strain="Sprague-Dawley"
/db_xref="taxon:10116"
/clone="UI-R-CO-1v-e-09-0-01"
/dev_stage="adult"
/lab_host="DH10B (Life Technologies)"
/notes="Vector: pT73D-Pac (Pharmacia) with a modified
polylinker. Site 1: Not I; Site 2: Eco RI; The UI-R-CO
library is a subtracted library derived from the UI-R-A1
and UI-R-E1 libraries. The UI-R-A1 library consisted of a
mixture of individually tagged normalized libraries
constructed from rat placenta, adult lung, brain, liver,
kidney, heart, spleen, ovary, and muscle. The UI-R-E1
library consisted of a mixture of individually tagged
normalized libraries constructed from 8, 12 and 18-day
embryo. The tag is a string of 3-5 nucleotides present
between the Not I site and the oligo-dT track which
allows identification of the library of origin of a clone
within the mixture. The subtracted library (UI-R-CO) was
constructed as follows: PCR amplified cDNA inserts from a
pool of UI-R-A1 and UI-R-E1 clones from which 3' ESTs had
been derived was used as a driver in a hybridization with
the pooled UI-R-A1 and UI-R-E1 library in the form of
single-stranded circles. The remaining single-stranded
circles (subtracted library) was purified by
hydroxyapatite column chromatography, converted to
double-stranded circles and electroporated into DH10B
bacteria (Life Technologies) to generate the UI-R-CO
library. This procedure has been previously described
(Bonaldo, Lennon and Soares, Genome Research 6: 791-806,
1996)."
BASE COUNT      99 a      154 c      137 g      157 t      1 others
ORIGIN

```

```

Query Match      38.3%: Score 472.6; DB 46; Length 548;
Best Local Similarity 94.9%; Pred. No. 4e-78; Indels 8; Gaps 3;
Matches 522; Conservative 0; Mismatches 20;

```

```

QY 677 CGGCCGCTGAGAGAGCTGTCTCCACAGCCATGTGGCGCGTGGCGGAACTTG 736
|||||
DB 1 CGGCCGCTGAGAGAGCTGTCTCCACAGCCATGTGGCGCGTGGCGGAACTTG 60
|||||
QY 737 GCGCGATCCCTCTTAACCGGATCCGAGTACTAGTCTCCCTCCGAGATC 796
|||||
DB 61 GCGCGATCCCTCTTAACCGGATCCGAGTACTAGTCTCCCTCCGAGATC 120

```

```

OY 797 TGACCGGCTGCCGCTGTG -CCGACGATTAAGTGGGGGCGCCTATTATTCTATTATT 855
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DB 121 TCACCGGCTGCCGCTGTG -CCGACGATTAAGTGGGGGCGCCTATTATTCTATTATT 180
    |||||
OY 856 AATTATTATTATTATTTCCTGGAAACACAGTGGAGCCCTCCCGCGGTGGAGGAGTG 915
    |||||
DB 181 AATTATTATTATTATTTCCTGGAAACACAGTGGAGCCCTCCCGCGGTGGAGGAGTG 240
    |||||
OY 916 GTTGGAGAGGTGAGATGCTCCCACTTCTGGTGGAGACCTTCATCCCACTCTCAGGGG 975
    |||||
DB 241 GGTGGAGAGGTGAGATGCTCCCACTTCTGGTGGAGACCTTCATCCCACTCTCAGGGG 296
    |||||
OY 976 TGGGGGCTGCCGCTGTGCTGCTCCGCGGCTCCCGCGGTGGAGGAGTG 1035
    |||||
DB 296 -GGGGGCTGCCGCTGTGCTGCTCCGCGGCTCCCGCGGTGGAGGAGTG 353
    |||||
OY 1036 TGGGGGCGAGACCTGAATTCACCTCTCCATCTTCATATTTACATATTCAGATCTTT 1095
    |||||
DB 354 TGGGGGCGAGACCTGAATTCACCTCTCCATCTTCATATTTACATATTCAGATCTTT 413
    |||||
OY 1096 GCACAAACAGAGGGGTGGGGAGGGTCTGGCTTCATTTTCTGCTGTCAGAAATTCCT 1155
    |||||
DB 414 GCACAAACAGAGGGGTGGGGAGGGTCTGGCTTCATTTTCTGCTGTCAGAAATTCCT 473
    |||||
OY 1156 AATTATTATTATTATTACAGCAGTTTATAGTATTAATCTTATTATGAAGTTTATTATA 1215
    |||||
DB 474 AATTATTATTATTATTACAGCAGTTTATAGTATTAATCTTATTATGAAGTTTATTATA 533
    |||||
OY 1216 AGAAAAAANA 1225
    |||||
DB 534 AGAAAAAANA 543
    |||||

RESULT 8
LOCUS AA212316 555 bp mRNA EST 19-FEB-1997
DEFINITION mu3f12.r1 Soares 2bMT Mus musculus cDNA clone IMAGE:642191 5'
            similar to TR:G1041129 G1041129 SH2 DOMAIN CONTAINING GENE INDUCED
            BY MULTIPLE CYTOKINES, SIC.; mRNA sequence.
ACCESSION AA212316
VERSION AA212316.1 GI:1810970
KEYWORDS EST.
SOURCE house mouse.
ORGANISM Mus musculus.
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;
            Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
REFERENCE 1 (bases 1 to 555)
AUTHORS Marra, M., Hillier, L., Allen, M., Bowles, M., Dietrich, N., Dubuque, J.,
            Geisler, S., Kucaba, T., Lacy, M., Le, M., Martin, J., Morris, M.,
            Schellenberg, K., Steptoe, M., Tan, F., Underwood, K., Moore, B.,
            Theising, B., Wylie, T., Lennon, G., Soares, B., Wilson, R. and
            Waterston, R.
TITLE The WashU-HMNI Mouse EST Project
JOURNAL Unpublished (1996)
COMMENT On May 18, 1995 this sequence version replaced gi:811453.
            Contact: Marra M/Mouse EST Project
            WashU-HMNI Mouse EST Project
            Washington University School of MedicineP
            4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
            Tel: 314 286 1800
            Fax: 314 286 1810
            Email: mouseest@wustl.wustl.edu
            This clone is available royalty-free through LNL; contact the
            IMAGE Consortium (Info@image.llnl.gov) for further information.
            MGI:394183
            Possible reversed clone; similarity on wrong strand
            Seq primer: -28m13 rev2 ET from Amersham
            High quality sequence stop: 419.
FEATURES
    Source
        1..555
        /organism="Mus musculus"
        /strain="C57BL/6J"
        /db_xref="taxon:10090"

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BASE COUNT 75 a 230 c 167 g 83 t
ORIGIN
Query Match 36.8%; Score 454.8; DB 30; Length 555;
Best Local Similarity 92.8%; Pred. No. 7.8e-75;
Matches 477; Conservative 0; Mismatches 37; Indels 0; Gaps 0;

OY 70 CACCGGAGCCCGGCTCAGTCTGCTGCTCCCGCATCAGGAGCCCGGAGCGCTAG 129
    |||||
DB 42 CCGCGGAGCCCGGCTCAGTCTGCTGCTCCCGCATCAGGAGCCCGGAGCGCTAG 101
    |||||
OY 130 GCCACCCCTCCAGCTGGGCTCGAGTAGATGATGATGATGATGATGATGATGATGATGAT 189
    |||||
DB 102 GCCACCCCTCCAGCTGGGCTCGAGTAGATGATGATGATGATGATGATGATGATGATGAT 161
    |||||
OY 190 CAATCGATCTCCCGGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAG 249
    |||||
DB 162 CAATCGATCTCCCGGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAG 221
    |||||
OY 250 TTGCTGCTGCGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAG 309
    |||||
DB 222 TTGCTGCTGCGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAG 281
    |||||
OY 310 CCTGGGCGAGCTCACTTCGCGACCTTCGCGCTCCAGTCCAGTTCAGTTCAGTTCAGTTC 369
    |||||
DB 282 CCTGGGCGAGCTCACTTCGCGACCTTCGCGCTCCAGTCCAGTTCAGTTCAGTTCAGTTC 341
    |||||
OY 370 GACACGCGGCTCCGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAG 429
    |||||
DB 342 GACACGCGGCTCCGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAG 401
    |||||
OY 430 GCACGAGGCGGCTGCTGCGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAG 489
    |||||
DB 402 GCACGAGGCGGCTGCTGCGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAG 461
    |||||
OY 490 GAATGCTTCTTCTGCGCTCAGCTCAGCTCAGCTCAGCTCAGCTCAGCTCAGCTCAGCTCAG 549
    |||||
DB 462 GAATGCTTCTTCTGCGCTCAGCTCAGCTCAGCTCAGCTCAGCTCAGCTCAGCTCAGCTCAG 521
    |||||
OY 550 CTTCAGGCGCGGCTTCCTTCCACTTGAGAGGCGAGC 583
    |||||
DB 522 CTTCAGGCGCGGCTTCCTTCCACTTGAGAGGCGAGC 555
    |||||

RESULT 9
LOCUS AA850220 523 bp mRNA EST 08-JAN-1999
DEFINITION EST192987 Normalized rat ovary, Bento Soares Rattus sp. cDNA clone
            ROVAE05.3 end, mRNA sequence.
ACCESSION AA850220
VERSION AA850220.1 GI:4131808
KEYWORDS EST.
SOURCE Rattus sp.
ORGANISM Rattus sp.
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;
            Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.

```

REFERENCE 1 (bases 1 to 523)  
 AUTHORS Lee,N.H., Glodex,A., Chandra,I., Mason,T.M., Quackenbush,J.,  
 Kertavage,A.R. and Adams,M.D.  
 TITLE Rat Genome Project: Generation of a Rat EST (RST) Catalog & Rat  
 Gene Index  
 JOURNAL Unpublished (1998)  
 COMMENT On Jul 19, 1995 this sequence version replaced gi:2937760.  
 Other ESTs: EST192988  
 Contact: Lee, NH  
 ATCC  
 The Institute for Genomic Research  
 9712, Medical Center Drive, Rockville, MD 20850, USA  
 Tel: (301)-838-3529  
 Fax: (301)-838-0208  
 Email: nhlee@tigr.org  
 Seq primer: M13-21.  
 Location/Qualifiers  
 source 1..523  
 /organism="Rattus sp."  
 /db\_xref="ATCC (Inhost):2008691"  
 /db\_xref="taxon:10118"  
 /clone="ROYAB05"  
 /clone\_1id="Normalized rat ovary, Bento Soares"  
 /note="Organ: ovary; Vector: pT73pac; Site\_1: EcoRI;  
 Site\_2: NotI"  
 BASE COUNT 88 a 147 c 132 g 156 t  
 ORIGIN

Query Match 36.4%; Score 449.4; DB 45; Length 523;  
 Best Local Similarity 94.5%; Pred. No. 7.8e-74;  
 Matches 500; Conservative 0; Mismatches 21; Indels 8; Gaps 3;

OY 685 GAGAGAGCTGTGTCGCCAGCGCATGTCGCCGCGGTCGCGAGAACCTGGCGGCAT 744  
 DB 1 GGAGCGCTGTGTCGCCAGCGCATGTCGCCGCGGTCGCGAGAACCTGGCGGCAT 60  
 OY 745 CCCTCTTAACCCGCTACTCCGCTACTACTAGTTCCTCCCTCCAGATCGACCGC 804  
 DB 61 CCCTCTTAACCCGCTACTCCGCTACTACTAGTTCCTCCCTCCAGATCGACCGC 120  
 OY 805 TGCCGCTGTG-CGCGAGCATTAAGTGGGGCGCTTATTATTCTTATTATTATTA 863  
 DB 121 TGCCGCTGTGCGCGAGCATTAAGTGGGGCGCTTATTATTCTTATTATTATTA 180  
 OY 864 TTATTTTCTGGAACAGTGGAGCCCTCCCGCTGGGTGGAGGGAGTGTGGA 923  
 DB 181 TTATTTTCTGGAACAGTGGAGCCCTCCCGCTGGGTGGAGGGAGTGTGGA 240  
 OY 924 GGGTAGATGCTCCCTCACTTCTGCTGAGACCTCATCCACCTCTCAGGGGTGGGGTG 983  
 DB 241 GGGTAGATGCTCCCTCACTTCTGCTGAGACCTCATCCACCTCTCAGGGGTGGGGTG 294  
 OY 984 CTCCTCTCTGCTGCTCCCTCCGGGTCCCGCTGCTGTGAGACGTTGTGTGGGCCA 1043  
 DB 295 CTCCTCTCTGCTGCTCCCTCCGGGT-CGCCCTGCTGTGAGACGTTGTGTGGGCCA 353  
 OY 1044 GGACCTGAATCCCTCACTTCTGCTGAGACCTCATCCACCTCTCAGGGGTGGGCCA 1103  
 DB 354 GGACCTGAATCCCTCACTTCTGCTGAGACCTCATCCACCTCTCAGGGGTGGGCCA 413  
 OY 1104 CAGGGGTGGGGAGGCTCTGGCTTCATTTTCTGCTGTCGAGAAATATCCATTATTATA 1163  
 DB 414 CAAGGGTGGGGAGGCTCTGGCTTCATTTTCTGCTGTCGAGAAATATCCATTATTATA 473  
 OY 1164 TTTTACAGCCAGTTAGTAAATTAATTAATTAATTAATTAATTAATTAATTAATTA 1212  
 DB 474 TTTTACATCCAGTTAGTAAATTAATTAATTAATTAATTAATTAATTAATTAATTA 522

RESULT 10  
 AA024269/c 462 bp mRNA EST 21-JAN-1997  
 LOCUS

DEFINITION mh99h07.r1 Soares mouse placenta 4MBP13.5 14.5 Mus musculus cDNA  
 clone IMAGE:459133 5', mRNA sequence.  
 ACCESSION AA024269  
 VERSION GI:1489155  
 KEYWORDS EST.  
 SOURCE house mouse.  
 ORGANISM Mus musculus.  
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;  
 Eutheria; Rodentia; Sciurognathia; Muridae; Murinae; Mus.  
 REFERENCE 1 (bases 1 to 462)  
 AUTHORS Marra,M., Hillier,L., Allen,M., Bowles,M., Dietrich,N., Dubuque,T.,  
 Geisler,S., Kucaba,T., Lacy,M., Le,M., Martin,J., Morris,M.,  
 Schellenberg,K., Stepien,M., Tan,F., Underwood,K., Moore,B.,  
 Theising,B., Wylie,T., Lennon,G., Soares,B., Wilson,R. and  
 Waterston,R.  
 TITLE The WashU-HMI Mouse EST Project  
 JOURNAL Unpublished (1996)  
 COMMENT Contact: Marra M/Mouse EST Project  
 WashU-HMI Mouse EST Project  
 Washington University School of Medicine  
 4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108  
 Tel: 314 286 1800  
 Fax: 314 286 1810  
 Email: mouseest@wustl.edu  
 This clone is available royalty-free through LNL; contact the  
 IMAGE Consortium (info@image.llnl.gov) for further information.  
 MGI:276021  
 Seq primer: -28M13 rev2 from Amersham  
 High quality sequence stop: 442.  
 Location/Qualifiers  
 source 1..462  
 /organism="Mus musculus"  
 /strain="C57BL/6J"  
 /db\_xref="taxon:10090"  
 /clone="IMAGE:459133"  
 /clone\_1id="Soares mouse placenta 4MBP13.5 14.5"  
 /sex="unknown"  
 /tissue\_type="placenta"  
 /dev\_stage="adult"  
 /lab\_host="DH10B"  
 /note="Organ: placenta; Vector: pT73D-Pac (Pharmacia)  
 with a modified polylinker. Site\_1: Not I; Site\_2: Eco RI;  
 1st strand cDNA was primed with a Not I - oligo(dt) primer  
 [5'  
 TGTACCAATCTGAAGTGGAGCGCGCGCGAATTTTCTTTTCTTTTCTTTTCTTTTCTTTT  
 T 3']; double-stranded cDNA was ligated to Eco RI adaptors  
 (Pharmacia), digested with Not I and cloned into the Not I  
 and Eco RI sites of the modified pT73 vector. Library  
 went through one round of normalization, and was  
 constructed by Bento Soares and M.Fatima Bonaldo."  
 BASE COUNT 149 a 110 c 117 g 85 t 1 others  
 ORIGIN

Query Match 35.8%; Score 441.8; DB 27; Length 462;  
 Best Local Similarity 97.2%; Pred. No. 2e-72;  
 Matches 449; Conservative 0; Mismatches 13; Indels 0; Gaps 0;

OY 759 TATCCCGGATACCTAGTTCCTCCCTCCGATCTGACCGCGCTGGCGC 818  
 DB 462 TATCCCGGATACCTAGTTCCTCCCTCCGATCTGACCGCGCTGGCGC 403  
 OY 819 AGCATTAAGTGGGGCGCCTTATTATTATTATTATTATTATTATTATTATTATTATT 878  
 DB 402 ACTTNTAAGTGGGGCGCCTTATTATTATTATTATTATTATTATTATTATTATTATT 343  
 OY 879 CACGTGGAGGCTCCCGCGCTGGGTGGAGGAGTGGTGGAGGAGTGGATGCTCC 938  
 DB 342 CACGTGGAGGCTCCCGCGCTGGGTGGAGGAGTGGTGGAGGAGTGGATGCTCC 283  
 OY 939 CACTTCTGGCTGGAGACCTATCCACCTCTCAGGGGTGGGGTGTCTCTCTGTGC 998  
 DB 282 CACTTCTGGCTGGAGACCTATCCACCTCTCAGGGGTGGGGTGTCTCTCTGTGC 223



Oy	999	TCCCTCCGGGGCCCCCGGTGGTTAGACAGTTGTGTCTGGGGGACAGACCTGAATTCAC	1058
Db	222	ATCTCTCGGGGTCGCCCGCTGGTTGAGCAGTTTGTCTGGGGCAGACCTGAATTCAC	163
Oy	1059	TCTACACTCTCATGTTTACATATTCACATATCTTGGCACAACAGGGGTGGGGGAG	1118
Db	162	TCTACACTCTCATGTTTACATATTCACATATCTTGGCACAACAGGGGTGGGGGAG	103
Oy	1119	GTCCTCGGCTCATTTTCTGCTGTGCAGAAATCCTATTTAAATTTTACAGCCAGTT	1178
Db	102	GTCCTCGGCTCATTTTCTGCTGTGCAGAAATCCTATTTAAATTTTACAGCCAGTT	43
Oy	1119	TAGGTAATTAACCTTATTTATGAAGTTTTTTTAAAGAA	1220
Db	42	TAGGTAATTAACCTTATTTATGAAGTTTTTTTAAAGAA	1

```

RESULT 11
A1400249/c
LOCUS
DEFINITION
t6680d1.x1 Soares.Nhnpu.S1 Homo sapiens cDNA clone IMAGE:111921
similar to TR:015097 015097 JAB, PARTIAL CDS ; contains MER22.b2
MSRI repetitive element ;, mRNA sequence.
A1400249

```

ACCESSION	A1400249	
VERSION	A1400249.1	GI:4243336
KEYWORDS	EST.	
SOURCE	human.	

ORGANISM Homo sapiens  
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;  
Eutheria; Primates; Catarrhini; Homnidae; Homo.  
REFERENCE 1 (bases 1 to 591)

**AUTHORS** NCI-CGAP <http://www.ncbi.nlm.nih.gov/ncicgap>.  
**TITLE** National Cancer Institute, Cancer Genome Anatomy Project (CGAP)  
**JOURNAL** Tumor Gene Index  
**COMMENT** Unpublished (1997)  
On Mar 20, 1998 this sequence version replaced g1:2980432.

COMMENT

On Mar 20, 1998 this sequence version replaced gi:2980432.  
Contact: Robert Strausberg, Ph.D.  
Tel.: (301) 496-1550  
Email: Robert.Strausberg@nih.gov  
This clone is available royalty-free through LINT ; contact the  
IMAGE Consortium (info@imga.llnl.gov) for further information.  
Insert Length: 816 Std Error: 0.00  
Seq primer: -40UP from Gibco  
High quality sequence stop: 465.  
Location/Qualifiers

FEATURES

FEATURES	Location/Qualifiers
source	1. .591

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/organism="Homo sapiens"
/db_xref="taxon:9606"
/clone_image="IMAGE:2113921"
/clone_lib="Soares_NbHMPu_S1"
/tissue_type="Pooled human melanocyte, fetal heart, and
pregnant uterus"
/lab_host="DH10B"
/notes="Organ: mixed (see below); Vector: pT7T3D-Pac
(Pharmacia) with a modified polylinker; Site_1: Not I;
Site_2: Eco RI; Equal amounts of plasmid DNA from three
normalized libraries (melanocyte 2NbH, pregnant uterus
NbHPU, and fetal heart NbHH19w) were mixed, and ss circles
were made in vitro. Following HAP purification, this DNA
was used as tracer in a subtractive hybridization
reaction. The driver was PCR-amplified cDNAs from pools of
5,000 clones made from the same 3 libraries. The pools
consisted of I.M.A.G.E. clones 260232-265223,
340488-345479, and 484468-489479."

```

BASE COUNT	87 a	185 c	241 g	74 t	4 others
ORIGIN					

Query Match	34.1%	Score 421.4	DB 46	Length 591
Best Local Similarity	87.0%	Pred. NO. 1.2e-68		
Matches 507; Conservative	0	Mismatches 70	Indels 6	Gaps 4

[illegible]

RESULT 12  
AA119130/c  
LOCUS  
DEFINITION  
ACCESSION  
VERSION  
KEYWORDS  
SOURCE  
ORGANISM  
REFERENCE  
AUTHORS  
TITLE  
JOURNAL  
COMMENT

AA119130 449 bp mRNA EST 17-FEB-1997  
mp66604.r1 Soares 2NDMT Mus musculus cDNA clone IMAGE:574206 5'  
mRNA sequence.  
AA119130  
AA119130.1 GI:1676621  
EST.  
house mouse.  
Mus musculus  
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;  
Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
1 (Access 1 to 449)  
Marrir,M., Hillier,L., Allen,M., Bowles,M., Dietrich,N., Dubuque,  
Giesel,S., Kucaba,T., Lacy,M., Le,M., Martin,J., Morris,M.,  
Schellenberg,K., Steptoe,M., Tan,F., Underwood,K., Moore,B.,  
Thelning,B., Wylie,T., Lennon,G., Soares,B., Wilson,R. and  
Watersing,R.  
The MASHD-HHMT Mouse EST Project  
unpublished (1996)  
On Sep 12, 1996 this sequence version replaced gi:1407492.

Email: mouseest@watson.wustl.edu  
This clone is available royalty-free through LLNL; contact the  
IMAGS Consortium (info@image.llnl.gov) for further information.  
MGI:348854  
Seq primer: -28M13 rev2 from Amersham



34.08; Score 419.8; DB 27; Length 493;

Location/Qualifiers
1. .436

